

DBMS DEMO

```
create table customer (C_ID int, C_name varchar(50), City varchar(20), State varchar(20));
```

```
insert into customer values (101,'Alex','Mumbai','Maharashtra');
```

```
insert into customer values (102,'Alice','Ahmedabad','Gujarat');
```

```
insert into customer values (103,'Bob','Jaipur','Rajasthan');
```

```
insert into customer values (104,'Charlie','Ahmedabad','Gujarat');
```

```
insert into customer values (105,'Jason','Jaipur','Rajasthan');
```

SELECT COLUMNS

```
select C_Name, City, State from customer;
```

SELECT * EXAMPLE

```
select * from customer;
```

SELECT EXAMPLE WITHOUT DISTINCT

```
select state from customer;
```

SELECT EXAMPLE WITH DISTINCT

```
select DISTINCT state from customer;
```

WHERE CLAUSE (TEXT FIELD)

```
select * from customer where city = 'Mumbai';
```

WHERE CLAUSE (NUMERIC FIELD)

```
select * from customer where C_ID=102;
```

OPERATORS IN WHERE CLAUSE

```
select city from customer where C_ID=102;
```

```
select city from customer where C_ID>103;
```

```
select city from customer where C_ID<103;
```

```
select city from customer where C_ID>=103;
```

```
select city from customer where C_ID<=103;
```

```
select city from customer where C_ID<>103;
```

IN OPERATOR

select * from customer where city IN ('Mumbai','Ahmedabad');

LIKE OPERATOR

select * from customer where C_Name LIKE 'a%';

select * from customer where C_Name LIKE '%a';

select * from customer where C_Name LIKE '%or%';

select * from customer where C_Name LIKE '_r%';

select * from customer where C_Name LIKE 'a_%';

select * from customer where C_Name LIKE 'a__%';

select * from customer where C_Name LIKE 'a%o';

AND EXAMPLE

select * from customer where city='Mumbai' AND state='Maharashtra';

OR EXAMPLE

select * from customer where city='Jaipur' OR C_ID=102;

select * from customer where city='Jaipur' AND C_ID=102;

NOT EXAMPLE

select * from customer where NOT city='Jaipur';

BETWEEN OPERATOR

select * from customer where C_ID BETWEEN 102 AND 104;

UPDATE COMMAND

update customer SET city='Jaisalmer' , C_Name='James' WHERE C_ID=103;

update customer SET city='Gandhinagar', state='Gujarat' where city='Mumbai';

DELETE COMMAND

delete from customer where C_ID=102;

IS NULL OPERATOR

```
insert into customer (C_ID, C_Name) values (105,'Andrew');
```

```
select * from customer;
```

```
select C_ID, C_Name from customer where city IS NULL;
```

```
select C_ID, C_Name from customer where city IS NOT NULL;
```

AGGREGATE FUNCTIONS (with new table)

```
create table marks (s_name varchar(20), marks int);
```

```
insert into marks values ('Alex', 70);
```

```
insert into marks values ('Andrew',80);
```

```
insert into marks values ('Bob',60);
```

```
insert into marks values ('James',68);
```

```
insert into marks values ('Jason', 78);
```

MIN FUNCTION

```
select MIN(marks) from marks;
```

```
select MIN(marks) AS Minimum from marks;
```

MAX FUNCTION

```
select MAX(marks) from marks;
```

```
select MAX(marks) AS Minimum from marks;
```

COUNT FUNCTION

```
select COUNT(S_Name) from marks;
```

```
select COUNT(S_Name) AS Total_Students from marks;
```

SUM FUNCTION

```
select SUM(marks) from marks;
```

```
select SUM(marks) AS Total from marks;
```

AVG FUNCTION

```
select AVG(marks) from marks;
```

```
select AVG(marks) AS Average from marks;
```

CREATING A VIEW

```
CREATE VIEW CUST AS select C_ID, C_Name, City from customer;
```

SELECTING A VIEW

```
select * from CUST;
```

DELETING A VIEW

```
DROP VIEW CUST;
```

ALTER QUERY

```
ALTER TABLE Persons  
ADD DateOfBirth date;
```

```
ALTER TABLE Persons  
MODIFY COLUMN DateOfBirth year;
```

```
ALTER TABLE Persons  
DROP COLUMN DateOfBirth;
```

NOT NULL CONSTRAINT

```
CREATE TABLE Persons (  
    ID int NOT NULL,  
    LastName varchar(255) NOT NULL,  
    FirstName varchar(255) NOT NULL,  
    Age int  
);
```

```
ALTER TABLE Persons  
MODIFY Age int NOT NULL;
```

UNIQUE CONSTRAINT

```
CREATE TABLE Persons (  
    ID int NOT NULL,  
    LastName varchar(255) NOT NULL,  
    FirstName varchar(255),  
    Age int,  
    UNIQUE (ID)  
);
```

```
ALTER TABLE Persons  
ADD UNIQUE (ID);
```

PRIMARY KEY CONSTRAINT

```
CREATE TABLE Persons (  
    ID int NOT NULL,  
    LastName varchar(255) NOT NULL,  
    FirstName varchar(255),  
    Age int,  
    PRIMARY KEY (ID)  
);
```

```
ALTER TABLE Persons  
ADD PRIMARY KEY (ID);
```

DEFAULT CONSTRAINT

```
CREATE TABLE Persons (  
    ID int NOT NULL,  
    LastName varchar(255),  
    FirstName varchar(255),  
    Age int,  
    City varchar(255) DEFAULT 'Sandnes'  
);
```

```
ALTER TABLE Persons  
modify City DEFAULT 'Sandnes';
```

CHECK CONSTRAINT

```
CREATE TABLE Persons (  
    ID int NOT NULL,  
    LastName varchar(255),  
    FirstName varchar(255),  
    Age int,  
    CHECK (Age>=18)  
);
```

```
ALTER TABLE Persons  
ADD CHECK (Age>=18);
```

FOREIGN KEY CONSTRAINT

```
CREATE TABLE Persons (  
    ID int,  
    LastName varchar(255) NOT NULL,  
    FirstName varchar(255),  
    Age int,  
    PRIMARY KEY (ID)  
);
```

```
CREATE TABLE Orders (  
    OrderID int NOT NULL,  
    OrderNumber int NOT NULL,  
    PersonID int,  
    PRIMARY KEY (OrderID),  
    FOREIGN KEY (PersonID) REFERENCES Persons(ID)
```

);

ALTER TABLE Orders
ADD FOREIGN KEY (PersonID) REFERENCES Persons(ID);

DROP QUERY

DROP DATABASE databasename;
DROP TABLE table_name;

TRUNCATE QUERY

truncate table tablename;

ORDER BY

SELECT * FROM Customers
ORDER BY Country;

ORDER BY DESC

SELECT * FROM Customers
ORDER BY Country DESC;

ORDER BY Several Columns (Don't work)

SELECT * FROM Customers
ORDER BY Country ASC, CustomerName DESC;

UNION

create table customers (C_ID int, C_name varchar(50), Address varchar(50), City varchar(20),
Country varchar(20));

insert into customers values (101,'Maria Anders','Obere Str. 57', 'Berlin', 'Germany');

insert into customers values (102,'Ana Trujillo', 'Avda. de la Constitución 2222', 'México D.F.',
'Mexico');

insert into customers values (103,'Antonio Moreno', 'Mataderos 2312', 'México D.F.', 'Mexico');

create table supplier (S_ID int, S_name varchar(50), Address varchar(50), City varchar(20),
Country varchar(20));

insert into supplier values (101, 'Charlotte Cooper', '49 Gilbert St.', 'London', 'UK');

insert into supplier values (104, 'Shelley Burke', 'P.O. Box 78934', 'New Orleans', 'USA');

insert into supplier values (105, 'Regina Murphy', '707 Oxford Rd.', 'Ann Arbor', 'USA');

insert into supplier values (106, 'Ana Trujillo', 'Avda. de la Constitución 2222', 'México D.F.',
'Mexico');

```
SELECT City FROM Customers
UNION
SELECT City FROM Supplier
ORDER BY City;
```

UNION ALL

```
SELECT City FROM Customers
UNION ALL
SELECT City FROM Supplier
ORDER BY City;
```

UNION with WHERE

```
SELECT City, Country FROM Customers
WHERE Country='Germany'
UNION
SELECT City, Country FROM Supplier
WHERE Country='Germany'
ORDER BY City;
```

UNION ALL with WHERE

```
SELECT City, Country FROM Customers
WHERE Country='Germany'
UNION ALL
SELECT City, Country FROM Supplier
WHERE Country='Germany'
ORDER BY City;
```

CROSS JOIN

```
select * from customers cross join supplier;
```

```
select C_Id, C_Name from customers cross join supplier;
```

NATURAL JOIN

```
CREATE TABLE customer (id INT PRIMARY KEY, customer_name VARCHAR(55), account int,
email VARCHAR(55));
```

```
CREATE TABLE balance (id INT PRIMARY KEY, account int, balance float(10,2));
```

```
INSERT INTO customer VALUES (1,'Stephen', 1030, 'stephen@abc.com');
INSERT INTO customer VALUES (2,'Jenifer', 2035, 'jenifer@abc.com');
INSERT INTO customer VALUES(3,'Mathew', 5564, 'mathew@abc.com');
INSERT INTO customer VALUES(4,'Smith', 4534, 'smith@abc.com');
INSERT INTO customer VALUES(5,'David', 7648, 'david@abc.com');
```

```
INSERT INTO balance VALUES (1, 1030, 50000.00);
INSERT INTO balance VALUES (2, 2035, 230000.00);
INSERT INTO balance VALUES (3, 5564, 125000.00);
INSERT INTO balance VALUES (4, 4534, 80000.00);
```

```
INSERT INTO balance VALUES(5, 7648, 45000.00);
```

```
select customer_name, balance from customer natural join balance;
```

```
select customer_name, balance from customer natural join balance where balance>50000;
```

FULL OUTER JOIN

```
select customer.customer_name, balance.balance from customer full outer join balance on  
customer.id=balance.id order by customer.customer_name;
```

SUBQUERIES

```
CREATE TABLE Persons (  
    ID int,  
    LastName varchar(255) NOT NULL,  
    FirstName varchar(255),  
    Age int,  
    PRIMARY KEY (ID)  
);
```

```
CREATE TABLE Orders (  
    OrderID int NOT NULL,  
    OrderNumber int NOT NULL,  
    PersonID int,  
    PRIMARY KEY (OrderID),  
    FOREIGN KEY (PersonID) REFERENCES Persons(ID)  
);
```

```
insert into persons values (1, 'Hansen','Ola',30);  
insert into persons values (2,'Shah', 'Tarun', 23);  
insert into persons values(3,'Patel', 'Kamlesh',20);
```

```
insert into orders values (1,778,3);  
insert into orders values (2,446,3);  
insert into orders values (3,224,2);  
insert into orders values (4,245,1);
```

```
select * from orders;
```

```
select * from orders where ordernumber=446;
```

```
select firstname from persons where id=(select personid from orders where ordernumber=446);
```

```
select ordernumber from orders where personid =(select id from persons where age>20);
```

```
select ordernumber from orders where personid in (select id from persons where age>20);
```

```
select ordernumber from orders where personid not in (select id from persons where age>20);
```